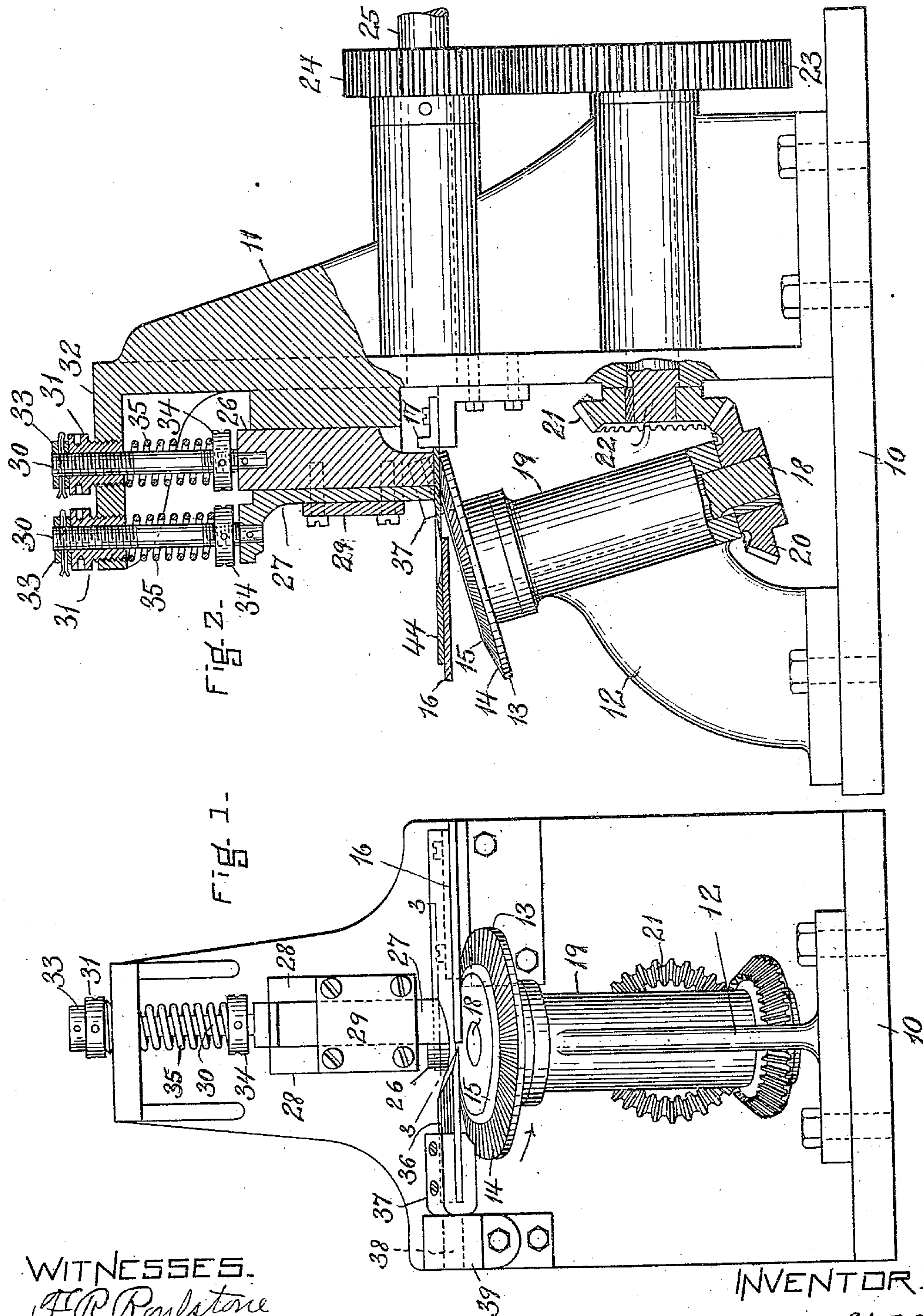


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J. BUSFIELD.
SKIVING MACHINE.
APPLICATION FILED APR. 26, 1909.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.



WITNESSES.
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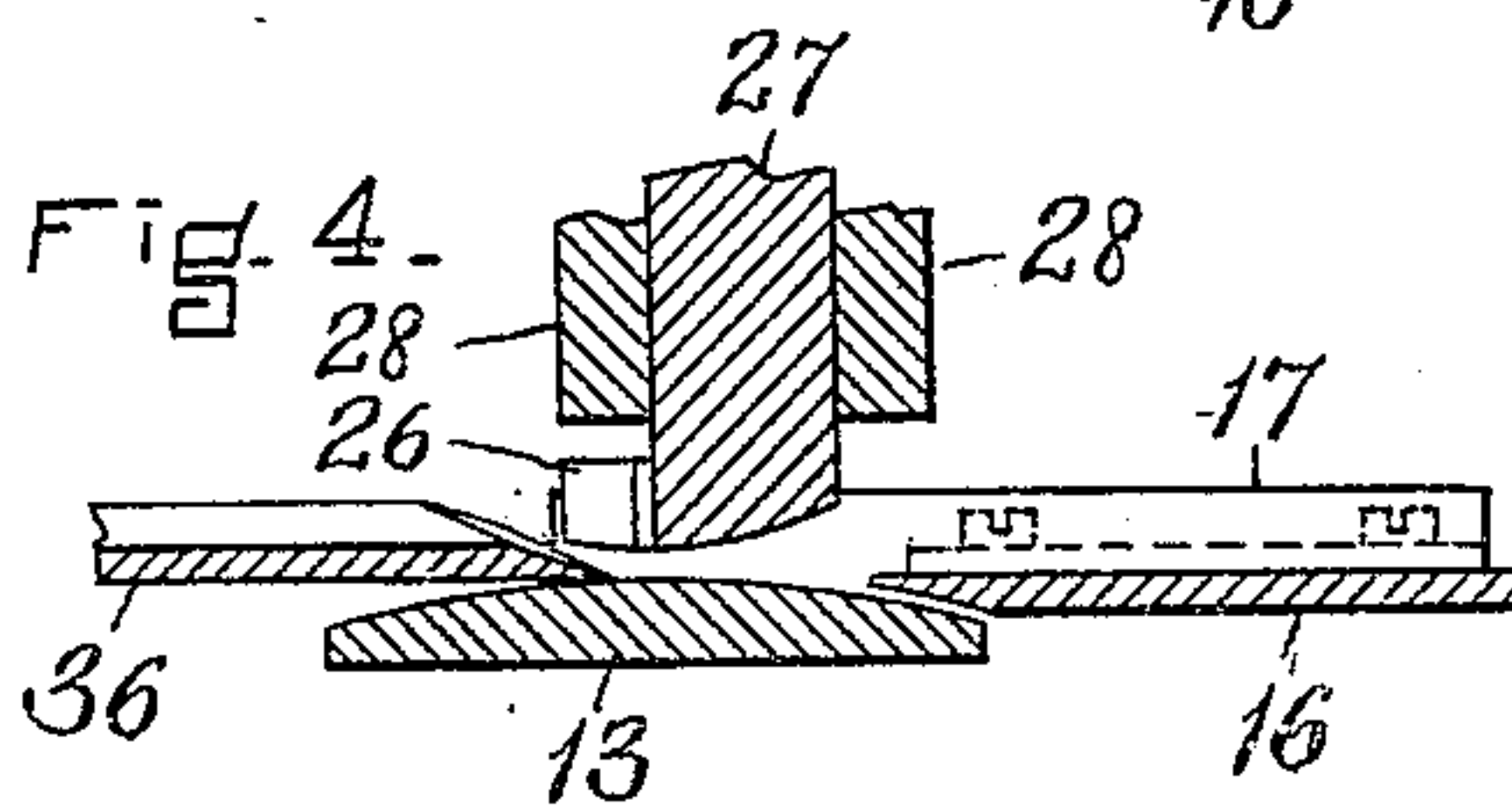
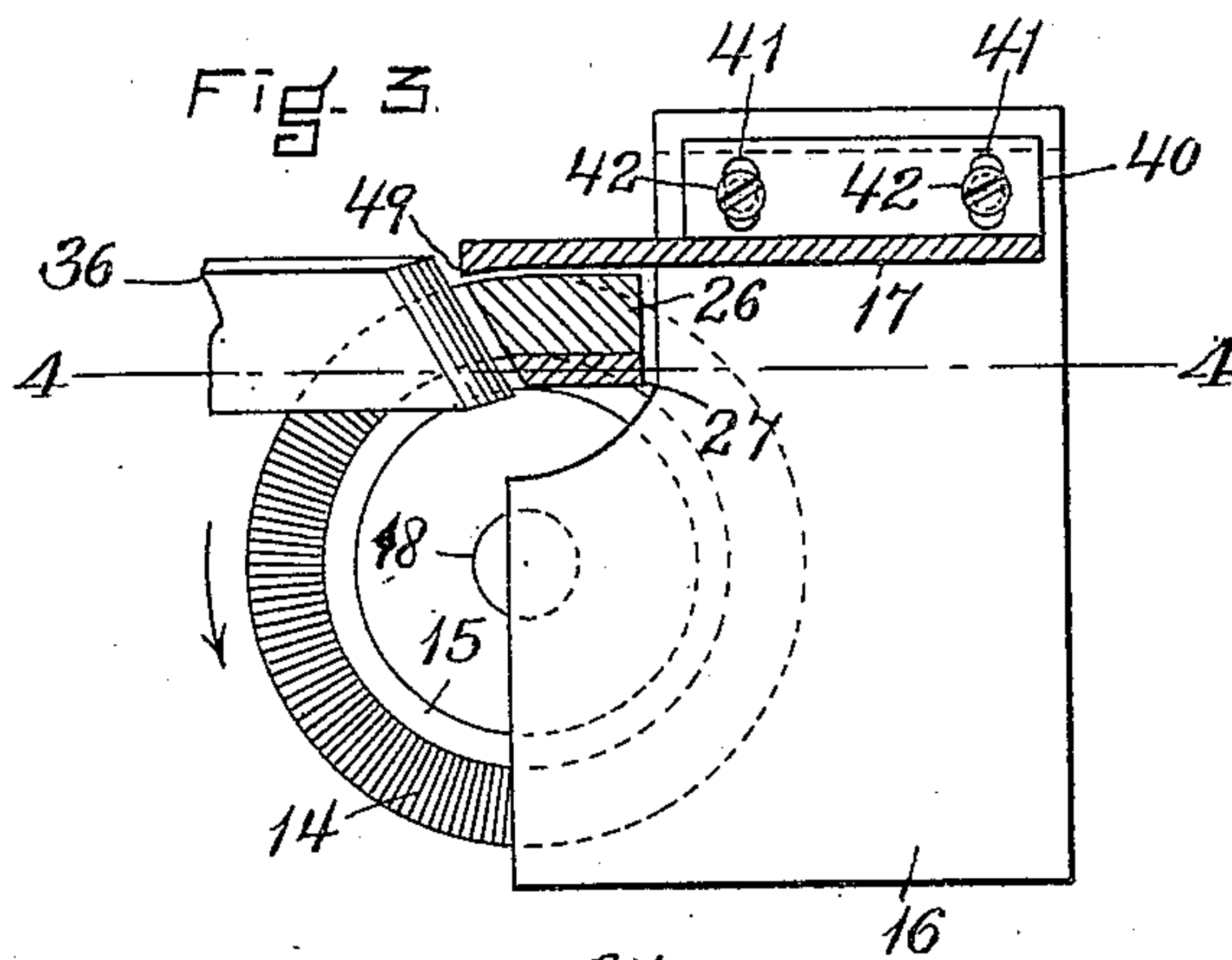
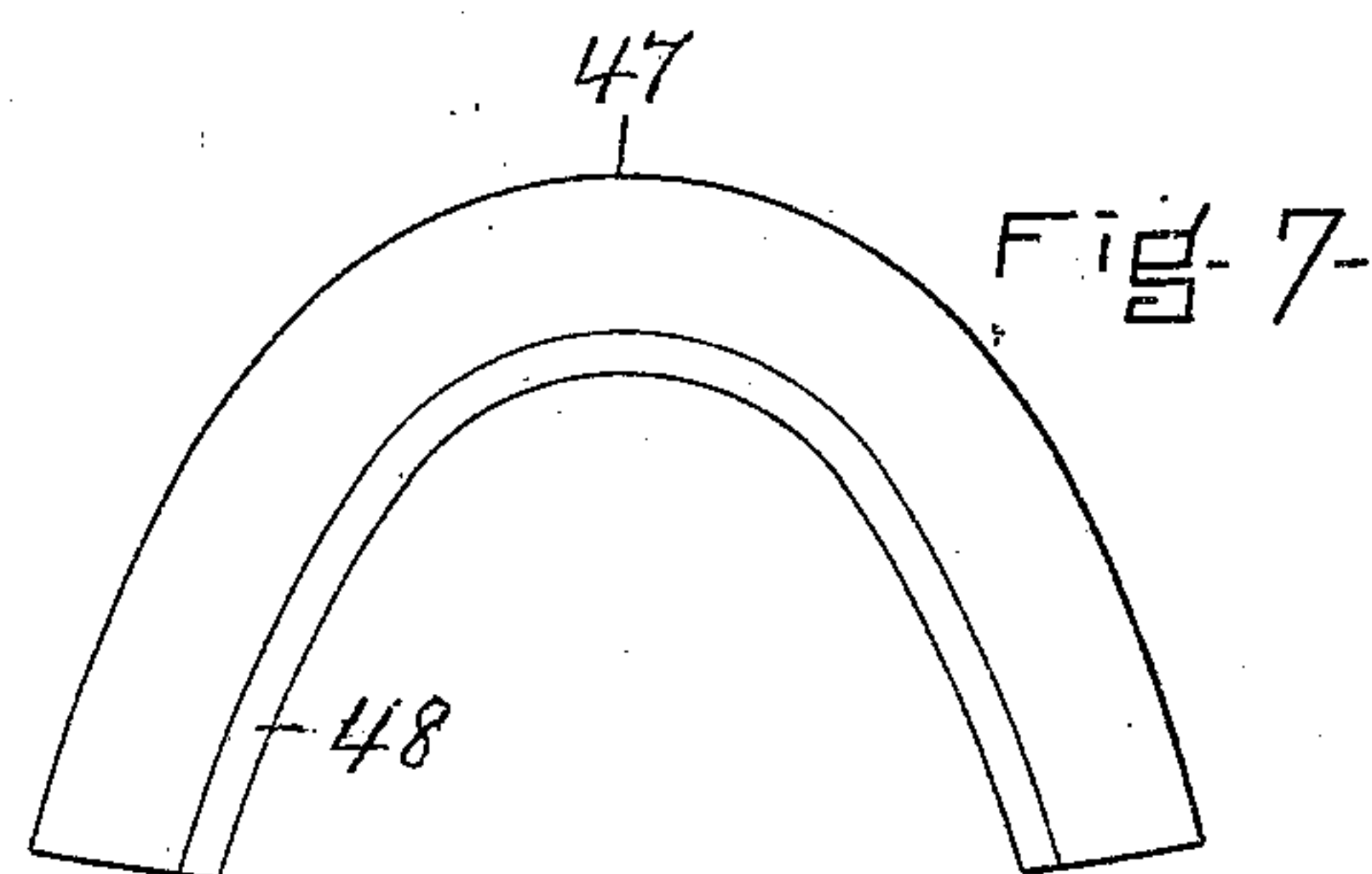
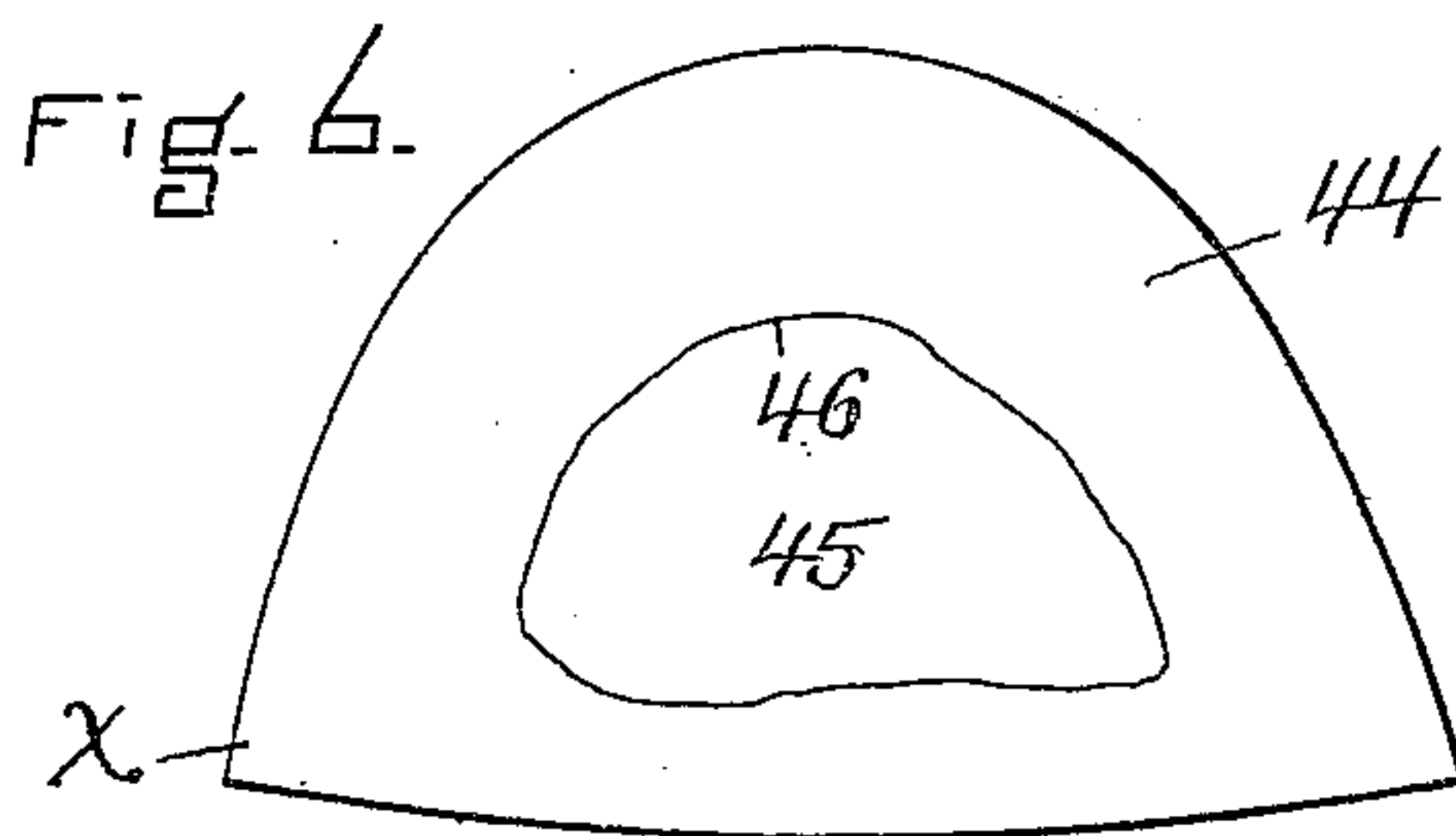
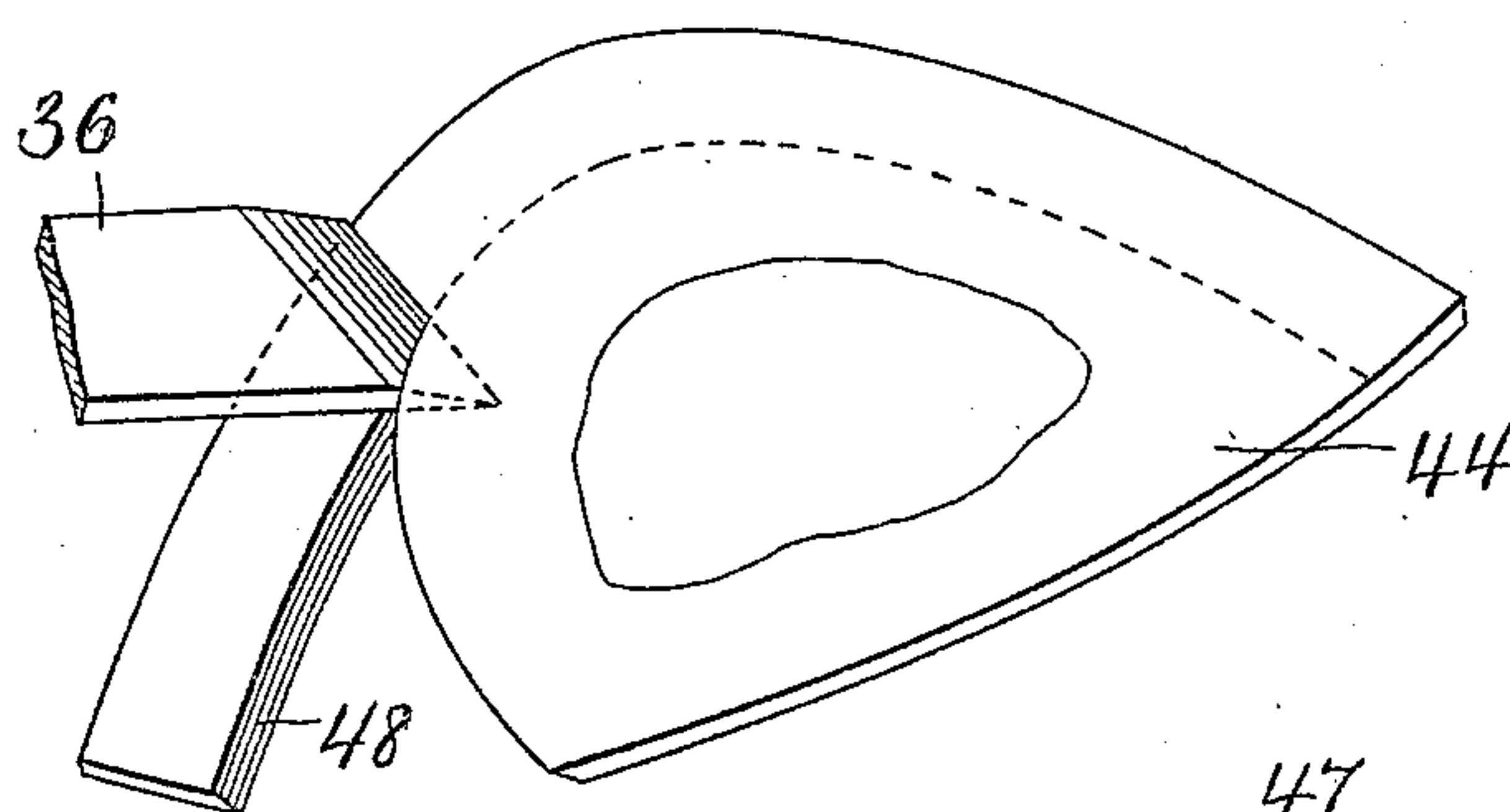


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES BUSFIELD, OF HAVERHILL, MASSACHUSETTS.

SKIVING-MACHINE.

954,778.

Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed April 26, 1909. Serial No. 492,371.

To all whom it may concern:

Be it known that I, JAMES BUSFIELD, of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Skiving-Machines, of which the following is a specification.

This invention relates to skiving machines and it is particularly adapted for producing strips of leather to be used as heel rands.

In skiving toe caps for shoes, a remnant of leather is formed which has the outline of the toe cap and which is comparatively thick at the marginal portions, and which usually has a hole in the central portion produced by forming the toe cap so that the entire thickness of the leather is left in the central portion and the edges beveled. It therefore follows that the relative thickness of material in a remnant is the opposite of the thickness of material in the toe cap at corresponding points.

The chief object of this invention is to utilize the remnants left in the manufacture of toe caps for the purpose of forming heel rands. This is done by cutting from the remnant the marginal portion of the curved edge, thus leaving a U-shaped strip having a square outer edge and preferably a beveled inner edge. In this way the greater proportion of a toe cap remnant may be utilized because the thicker portion of the remnant is utilized as a heel rand, and the thinner portion, which is near the center of the remnant, is not of great practical value.

In carrying out the invention I provide a knife with an oblique edge on one end, and a frusto-conical feed roll having a rough outer zone and a smooth inner zone, and a pair of presserfeet coöperating respectively with the two zones, whereby the thicker portion of the remnant is engaged by the rough zone and one presserfoot for the purpose of feeding it, and the thinner portion is engaged by the smooth zone and the other presserfoot for the purpose of assisting in guiding the work to the knife.

Of the accompanying drawings which illustrate one form in which the invention may be embodied, Figure 1 is a front elevation of a skiving machine. Fig. 2 is a central vertical section thereof. Fig. 3 is a section on line 3—3 of Fig. 1. Fig. 4 is a section on line 4—4 of Fig. 3. Fig. 5 is a perspective view of a toe cap remnant and a skiving knife in the act of skiving the mar-

ginal portion of the remnant. Fig. 6 is a plan view of a toe cap remnant. Fig. 7 is a plan view of a heel rand cut therefrom.

The same reference characters indicate the same parts wherever they occur.

Referring first to Figs. 1 and 2, 10 represents a base on which are mounted two uprights 11 and 12. The upright 11 furnishes bearings for suitable driving mechanism and supports the knife, the work table, and a pair of presserfeet as hereinafter explained, while the upright 12 provides a bearing for the feed roll. The feed roll is indicated at 13 and is of frusto-conical formation having a roughened zone 14 and an inner zone 15 which is smooth. 16 is a work table secured to the upright 11 and provided with an adjustable work guide 17 for guiding the work to the operative portion of the feed roll. The feed roll is affixed to one end of a shaft 18 journaled in a bearing 19 formed on the upright 11 and arranged with its axis inclined to the plane of the work table. The other end of the shaft 18 is provided with a bevel gear 20 intermeshing with a bevel gear 21 on one end of a shaft 22 journaled in the upright 11. The other end of the shaft 22 is provided with a spur gear 23 intermeshing with a pinion 24 on a driving shaft 25 likewise journaled in the upright 11. The shaft 25 is driven so as to cause the feed roll to turn in the direction indicated by the arrows in Figs. 1 and 3. By reason of forming the feed roll with a frusto-conical work-engaging surface and mounting it so as to revolve upon an axis inclined to the work table, that portion of the feed roll which is in engagement with the work is substantially parallel to the plane of the table.

26 represents a presserfoot adapted to coöperate with the roughened zone of the feed roll and 27 represents an independently movable presserfoot adapted to coöperate with the smooth zone. The two presserfeet are arranged in contiguous relation between guides 28 formed on the upright 11, and they are confined in the guides by a plate 29. Each presserfoot is provided with a stem 30. The stems extend loosely through guides 31 screw-threaded in a bracket 32 formed at the upper portion of the upright 11. The stems are provided with nuts 33 and 34 which are respectively on opposite sides of the guides. Helical springs 35 surround the stems 30 and are compressed between the nuts 34 and the guides 31 and exert their tension to move the

presserfeet toward the feed roll. The movement of the presserfeet toward the feed roll may be limited by the nuts 33 which are adapted to abut against the tops of the guides, and the limit of movement may be adjusted by turning the guides in their screw-threaded sockets. The tension of the springs 35 may be adjusted by turning the nuts 34 on the stems so as to compress the springs more or less.

A skiving knife is represented at 36. One end of the knife is clamped in a holder 37 which is formed with a cylindrical stem 38 extending longitudinally of the knife. The stem 38 is adjustably secured in a clamp 39 on the upright 11, and by this means the knife is adapted to be adjusted about its longitudinal axis and to be adjusted toward and from the presserfeet. By reference to Fig. 3, it will be seen that the cutting edge of the knife extends obliquely across the rough and smooth zones of the feed roll and that it is tangent to a circle of the roll. The knife extends close to the presserfeet whose adjacent perpendicular faces are likewise formed obliquely and which are parallel to the edge of the knife. In order to cut a beveled surface on the work, the knife is adjusted about its longitudinal axis so as to be inclined to the plane of the work table as shown by Figs. 1 and 2.

The work guide 17 presents a straight edge for guiding the work to the feed roll, said straight edge extending to a transverse line intersecting the axis of the roll. Beyond this line the work-engaging edge of the guide is curved so as to coincide with the curvature of the roll. The work guide is formed with a lip 40 in which are provided elongated apertures 41 adapted to receive screws 42 screw-threaded in the table, and adapted to clamp the work guide at any desired position. The work guide is preferably adjusted so that its straight edge is tangent to the feed roll.

Figs. 5 and 6 show a piece of leather 44 such as the remnant left from skiving a toe cap. The remnant is relatively thick around the marginal portion and is so beveled toward the interior that, in most cases, an opening 45 is produced leaving a feathered edge 46. From a remnant of this character, the marginal portion may be skived so as to form a U-shaped strip 47 as shown by Fig. 7. For this purpose the corner α of the remnant 44 is laid against the work guide 17 and introduced between the presserfeet and the

feed roll. As it is caught up and advanced by the feed roll, it is intersected by the inclined cutting edge of the knife as shown by Fig. 5, thereby severing the marginal portion and leaving a beveled edge 48. As the work is advanced, it engages the curved extremity 49 of the work guide and is deflected slightly whereby the movement of the work is caused to coincide with the contour thereof and facilitate the feeding whereby the knife is caused to cut in a curved path as indicated by the dotted line in Fig. 5. The edges of the presserfeet which lie nearest the knife and the cutting edge of the knife are oblique with relation to the movement of the work. This arrangement assists in giving the work a circular motion so as to cause the knife to cut as described.

I claim:—

1. In a skiving machine, a stationary skiving knife of which the cutting edge is oblique to the path of the work, and work feeding means including a frusto-conical supporting roll, and a presserfoot coöperating therewith to engage the work before it reaches the cutting edge, said presserfoot being likewise oblique to the path of the work at the edge nearest the knife edge.

2. In a skiving machine, means for supporting and feeding the work, and a work guide having a straight work-engaging edge tangent to the feed roll and a curved extremity adapted to deflect the work from a straight path.

3. In a skiving machine, a pair of presser feet, relatively stationary guides therefor, and a feed roll having a roughened zone coöperating with one presser foot and a smooth zone coöperating with the other presser foot.

4. In a skiving machine, a feed roll having a roughened zone and a smooth zone, parallel guides, and a pair of presser feet arranged in said guides so as to coöperate respectively with said zones.

5. In a skiving machine, a frusto-conical feed roll, a work table, a work guide on the table, a knife whereof the edge is oblique to the path of the work and tangent to a circle of the roll, and a pair of independent contiguous presserfeet coöperating with the roll near the knife.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JAMES BUSFIELD.

Witnesses:

C. F. BROWN,
P. W. PEZZETTI.